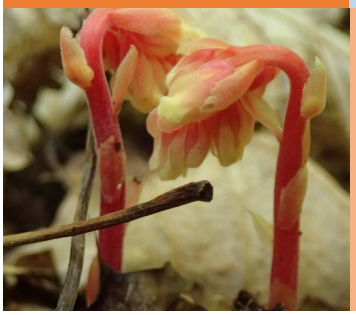
Update

November 2017

JOINT CHIEFS' LANDSCAPE RESTORATION PARTNERSHIP



Lower Cowpasture Restoration Project

American chestnut Photo The American Chestnut Foundation

Partners working in the Lower Cowpasture Restoration Project area of Alleghany, Bath and Rockbridge counties in western Virginia received some fantastic news in early 2017. The proposal for the Joint Chiefs' Partnership was accepted. With that came a boost worth over $500,000 in just year one dedicated to on-the-ground restoration in the biologically rich Cowpasture River, a priority watershed (117,500 acres) within the Chesapeake Bay headwaters.

A history of strong collaboration and cooperation between diverse partners paved the way for this opportunity. Much of the early work focused on prescribed fire and mechanical forest management across jurisdictional boundaries. This project builds upon that history of collaboration and cooperation to (1) restore the health, diversity and resiliency of fire-adapted forests and rare plant communities while decreasing the risk of wildfire to adjacent communities; (2) improve habitat for forest bats, declining early successional birds, and other priority Species of Greatest Conservation Need in Virginia's *Wildlife Action Plan* (2015); (3) improve water quality, function and connectivity of streams, and full passage of aquatic organisms, including surrogate species such as brook trout and other rare fish and mussel species; and (4) remove non-native invasive plant species while restoring native plant diversity, including American chestnut and native pollinator habitat. Projects highlighted in this 2017 report were identified and included in the Joint Chiefs' Proposal. Each contribute to goals of implementing treatments across federal, state, and private lands.

Monarch caterpillar feasting on milkweed

Lower Cowpasture Restoration Project Updates

Project: Pollinator Habitat Establishment/Herbicide Treatment (NNIS)
Partner: USFS
Contact: Jenny Henning, henningj@fs.fed.us

The Walton Tract, a management area on the Warm Springs Ranger District of George Washington and Jefferson National Forest, was identified as a priority site to establish pollinator habitat. Additionally, it will provide early successional habitat for imperiled bird species identified in the Virginia Wildlife Action Plan (2015) including Eastern Meadowlark, Eastern Towhee, Rusty Blackbird, and Field Sparrow. The site, situated next to the Cowpasture River, also serves as a riparian buffer for sections of the Cowpasture River where augmentation of James Spiney mussel, a federally listed species, is planned.

Old fields dominated by cool season grasses and surrounded by walls of non-native invasive shrubs and trees had been managed for hay production. In preparation for planting the native seed mix, twenty-seven (27) acres of old field were treated in early summer 2017 with triclopyr herbicide targeting broad leaved weeds (sericea lespedeza, mullen, smartweeds, wingstem) and invasive shrubs (autumn olive and multiflora rose). The perimeter of the old fields proved to be tougher, requiring both chemical and mechanical treatment. Five (5) acres were chemically treated with imazapyr (via EZ-ject cartridges) and triclopyr (foliar) targeting tree-of-heaven, princess tree, and autumn olive. The five acres were then mechanically treated using a skid steer equipped with a mowing/mulching attachment. After the pre-treatments were completed, the old fields were drill seeded with the native seed mix designed especially for pollinators including five (5) species of warm season grass, two species of milkweed, round-headed lespedeza, Maximillian's sunflower, hairy mountain mint, ironweed, and other pollinator supporting herbaceous plants.

Planting native seed mix using seed drill at Walton Tract.

Photo by Jenny Henning

In addition to the pollinator habitat establishment, forty-four (44) additional acres were mowed to prevent woody species establishment and encroachment, expanding the early successional habitat available for birds.

Project: American Chestnut Restoration
Partner: USFS, The American Chestnut Foundation
Contacts: Seth Ellis, williamsellis@fs.fed.us and Tom Saielli, tom.saielli@acf.org

In cooperation with The American Chestnut Foundation, Forest Service staff and eight (8) volunteers planted 600 American chestnut seedlings at Bluegrass Hollow on the George Washington and Jefferson National Forests in December 2016. The seedlings are part of the backcross breeding program designed by The American Chestnut Foundation to produce a blight resistant American chestnut.

Weeding around American chestnut seedlings , July 2017

Photo by Seth Ellis

The American chestnut planting is a one-acre progeny site and reintroduction trial designed to answer two questions: 1) test the blight resistance of the hybrid American chestnuts and 2) measure deer browse trends of different families of hybridized seedlings.

The planted seedlings are 15/16 American chestnut and 1/16 Chinese chestnut hybrids, bred to have all the characteristics of the American chestnut with the blight resistance of the Chinese chestnut. As these trees mature, they will be monitored for blight resistance and overall vigor in a natural stand.

"Should we go through the effort to cage or tube or can we get sufficient survival by simply planting the trees and leaving them open to browse?"

-Seth Ellis USFS

To examine the question of deer browse, 200 seedlings were caged and 200 seedlings were placed in tubes to exclude deer. The remaining 200 seedlings were left open with no protection. The purpose of the cage vs tube vs open is to evaluate if the seedlings are browsed and if so how

do the seedlings respond to that browse.

In June 2017, survival checks were completed as well as some weeding around seedlings. Survival rates were at 61%. A more intensive weeding was done around the seedlings in July 2017.

The one-year survival check and deer browse monitoring is scheduled for late November 2017.

American chestnut bur

Photo from The American Chestnut Foundation

Hybrid American chestnut protected by a wire cage.

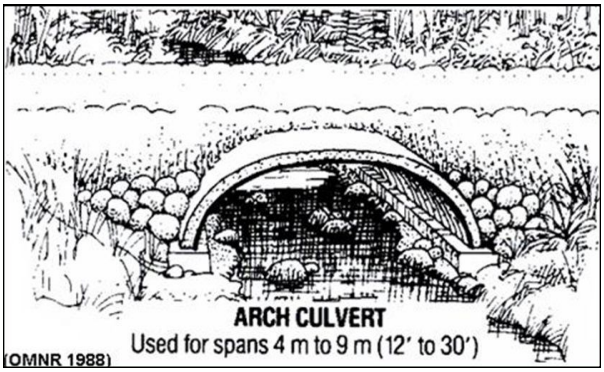
Photo by Seth Ellis

Hybrid American chestnut seedling in plastic grow tube. Photo by Seth Ellis

Project: Aquatic Organism Passage/Watershed Improvements
Partner: USFS, Trout Unlimited, NRCS
Contact: Jonathan Berry (USFS), jonathanberry@fs.fed.us

Bottomless arch culverts used at road crossings provide a more natural stream form, reestablishing connectivity and passage of brook trout, rare fish, and other mobile aquatic species. Freshwater mussels are far less mobile depending upon fish host for their dispersal. The ability of host fish to move into new habitat means freshwater mussel species are moving into these areas too.

Porters Mill and Piney Mountain Branch, on the National Forest, will be the first under the Joint Chiefs' to receive bottomless arch culverts removing existing aquatic barriers posed by outdated culvert crossings. Contracts for these projects have been awarded and work is anticipated to begin in 2018.



Example of an arch culvert design (from USFWS)

Aquatic organism passage (AOP) work is also in full swing in the Pads Creek drainage. The Joint Chiefs' funds supported engineering field surveys during October 2017. Ten (10) culverts are slated for removal/ replacement on portions of Pads Creek Road (Forest Road 129) which follows South Fork Pads Creek. One (1) AOP culvert on Limekiln Hollow Road (Forest Road 194) and one (1) culvert on Downey Branch in the Long Dale Recreation Area were also surveyed in October 2017.

Project: Prescribed Fire/Fuel Reduction
Partners: USFS, The Nature Conservancy
Contact: Nikole Simmons (TNC), nikole.simmons@tnc.org

USFS fire management staff and partners planned to burn four prescribed burn units totaling 4,487 acres within the Lower Cowpasture Restoration Project during the 2017 spring season. February 21st marked the beginning of prescribed fire season for the Central Fire Management Zone of the George Washington and Jefferson National Forests burning 49 acres in the Walton Tract. Resources on the burn were USFS staff from Warm Springs and James River Ranger Districts, The Nature Conservancy, Wildland Restoration International, and Bureau of Indian Affairs Fort Apache. The Fort Apache Engine Crew was detailed to the National Forest to staff a Type 6 Engine for wildfire response and prescribed burning operations.

To bolster prescribed fire operations in Lower Cowpasture, The Nature Conservancy hosted a four-person fire module from Wildland Restoration International (WRI), February through May 2017. WRI is a non-profit conservation minded organization that promotes the use of "carefully tended fire" sending trained staff and equipment to help implement prescribed fire in natural areas. The WRI fire module was a vital asset to prescribed fire projects within the Lower Cowpasture Restoration Project. The module assisted in prescribed fire preparation helping to remove brush, fall dead snags along fire lines, blow leaves, and construct fire lines. WRI spent 17 days working on prescribed fire preparation within the Lower Cowpasture Restoration Project.

Weather limitations and an active spring wildfires did put a damper on prescribed fire operations. Not all the planned acres saw prescribed fire. USFS Fire Crews began prepping the Coffee Pot Burn Unit and Middle Mountain Burn Unit. The WRI module and the Augusta Interagency Hotshot Crew spent one (1) week prepping lines gearing up for fall 2017 and spring 2018 burn seasons.

Upcoming prescribed fires in the Lower Cowpasture Restoration Project:

Coffee Pot Burn Unit (361 ac)

North Short Mountain Burn Unit (2,258 ac)

Middle Mountain Burn Unit (921 ac)

Mares Run Burn Unit (842 ac)

Walton Tract (40 ac)

WRI Fire Module, (L to R) James Pilsmaker, Montana Cohn, Rudy Myles, and Martin Jacob with a neighbor's dog.

February 2017

Walton Tract Prescribed Fire

Photos by Nikole Simmons

VA Dept. of Forestry County Forester, John Wright, discusses the plan with Burn Boss and Fire Management Officer, Kurt Thompson.

Martin Jacob (WRI) uses a drip torch to bring ignitions down a handline.

Montana Cohn (WRI) studies his map before conducting ignitions.

USFS Staff, Emily Ellis and John Feazell, operate a UTV pumper unit.

Project: Herbicide Treatments (Non-Native Invasive Species)
Partner: USFS
Contact: Jenny Henning (USFS), henningj@fs.fed.us and Seth Ellis (USFS), williamsellis@fs.fed.us

Non-native invasive species (NNIS) control is ongoing on the National Forest. Projects under the Joint Chiefs' Partnership are prioritized based on and in coordination with planned disturbance activities such as silvicultural treatments and prescribed fire.

Photo of tree-of-heaven infesting a forest road right-of-way.

Richard Gardner, Bugwood.org

Tree-of-heaven, autumn olive, and multiflora rose were treated along the Lime Kiln Road right-of-way. Approximately 7.8 miles of roadside were treated with glyphosate herbicide applied as a foliar treatment. Right-of-ways are often easy routes for new invaders to follow into fairly invasive free areas. Tree-of-heaven is particularly clever, waiting, sending up clones, and sowing its wind dispersed seed for miles into newly disturbed areas. Gaps in the forest canopy created through timber harvest or natural wind throw can quickly be colonized by tree-of-heaven, out-competing native trees like sun-loving oak seedlings for light and other resources. Controlling invasive species while they are a low population, easy to find and easy to treat prior to disturbance is the most effective and cost efficient methodology.

Mowing invasive shrubs and trees at Walton Unit Pollinator Habitat Establishment.

Photo by Jenny Henning

Two NNIS tree species have been prioritized for control in conjunction with timber harvest and forest thinning. Sixty-five (65) acres of tree-of-heaven and princess tree were treated with a basal bark application of triclopyr in 2017. A follow up treatment is planned for early spring 2018.

Mentioned earlier in this report, 32 acres of NNIS were sprayed and/or mowed as part of site preparation for the pollinator habitat establishment project on the Walton Tract.

Project: Hardwood Thinning/ TSI
Partner: USFS
Contact: Seth Ellis (USFS), williamsellis@fs.fed.us

A crop tree release contract treating 259 acres in the Lower Cowpasture was funded the Joint Chiefs' Partnership in 2017. In this silvicultural practice, the forester chooses desirable crop trees in a young stand (approximately 20 years) to bring forward into the future mature stand. About 25 trees per acre are selected for and released. Selected trees are typically desirable mast producing trees (mostly oak).

Regeneration harvests ranging from 16-39 acres over 31 stands are active on the National Forest: Beards Mountain, Lime Kiln, and Porters Mill. This more intensive treatment creates successional habitat resulting in more diversity across the landscape.

A Virginia NRCS Success Story: The Cowden's of Fort Lewis Lodge

Project: Private Lands (NRCS EQIP)
Partner: NRCS & John, Caryl, and David Cowden
Contact: Charles Simmons, charles.simmons@va.usda.gov

Inspired by agricultural practices in Ecuador, John Cowden sought to improve practices on his own farm in Virginia. To date, the Cowden's have excluded over 30,000 feet of the Cowpasture River and its tributaries and installed approximately 140 acres of riparian buffers.

Where is the seed for conservation sown? Sometimes it can be in your community, or in the case of John Cowden, as far away as Ecuador. The Cowden's had always been conservation-minded, but for John, it was an eye-opening hike in the Ecuadorian Andes Mountains that has lead to an even stronger commitment to conservation at home. John noticed the purity of the headwaters and noted the livestock were excluded from that high mountain stream where he hiked. John said, "If they can afford to exclude their livestock from surface waters under their financial agricultural situation, we should be able to do it at home." That is just what he set out to do. His hike in the early 2000's has led to the implementation of conservation practices including watering systems, tree plantings, and livestock exclusion from the waterways and wetlands of his family's farm in Bath County.

"If (the people of Ecuador) can afford to exclude their livestock from surface waters under their financial agricultural situation, we should be able to do it at home."

- John Cowden

John's father, Robert, purchased the property that is now Fort Lewis Lodge in 1959. It was managed as a 200-head cow and calf operation with John and his wife, Caryl, taking over in the late 1970's. When their son David returned home in 2016, the family returned to the cattle business with the purchase of the neighboring farm. Today the operation consists of over 500 acres of hay and pasture ground.

The Cowden's have long been interested in conservation and protecting the water quality of Cowpasture River. They continued to implement conservation practices while the farming operation was leased out for a number of years. In 1991, they first signed up for the Conservation Reserve Enhancement Program (CREP) offered by the Farm Service Agency (FSA) and have had many CREP contracts since. Their most recent CREP contract (2016) excluded cattle from 3,900 feet of the Cowpasture River. The Cowden's have also worked with the Mountain Soil and Water Conservation District and the Best Management Practice Program to implement cover crops, forage plantings, no-till plantings, watering systems for cattle, and fence to exclude approximately 4,000 feet of waterways. The Cowden's participate in Bath County's Multiflora Rose Eradication Program helping to tackle the invasive shrub on their land.

David and John Cowden reviewing the details of their newest conservation practice with Allison Moore, NRCS Soil Conservationist, during a recent visit.

Photo by Gus Wilkinson

EQIP funds from Lower Cowpasture Joint Chiefs' Partnership are

supporting new conservation efforts on the farm centered on improving grazing. Brush management, invasive species control, and rotational grazing practices will be implemented. John and David have already met with Bill Patterson, NRCS Grazing Specialist, to review their operation, available forages, and animal numbers to produce a comprehensive grazing plan. A grazing plan will allow for them to rotate cattle in a manner that will most effectively utilize available forages. They are especially interested in stockpiling, creep grazing to lengthen the grazing season, and diversifying their forage mix to address short comings of cool season forages.

Eastern Meadowlark by Alan Schmierer 2013, Wikimedia Commons

The Cowden's are enrolled in the Working Lands for Wildlife to improve wildlife habitat on their farm.

The future looks bright for the Cowden family of Fort Lewis Lodge. Their commitment to conservation is good for the environment and good for business too. The Fort Lewis Lodge provides to its visitors recreational opportunities to swim, fish, and float down Cowpasture River. Their investments in reducing erosion and stabilizing river banks now provide a pleasant recreational experience. The family looks forward to new conservation opportunities too. They are in the Working Lands for Wildlife to improve wildlife habitat and moving their operations to solar power through the REAP program offered through USDA's Rural Development. In addition to operating Fort Lewis Lodge and running the cattle operation, David is interested in exploring direct marketing of some of the farms products.

From a spark of conservation inspiration in the mountains of Ecuador over a decade ago came an expansion of conservation projects protecting the Cowpasture River. The Cowden family has become the epitome of what it means to be conservation stewards of Virginia's lands and waters.

A look at the Cowden Farm along the Cowpasture River.

Photo by Gus Wilkinson

The combination of technical assistance and funding from NRCS, FSA, and the District was a win-win for us."

- John Cowden

Inspecting a riparian buffer/reforestation project along Cowpasture River.

Photo by Gus Wilkinson

The Cowden's and NRCS staff taking in the scenery of the farm and talking about caring for the land they love.

Photo by Gus Wilkinson

Lower Cowpasture Project Monitoring and Evaluation

THREE (3) BIANNUAL REPORTS have been released by Elizabeth McNichols, District Ranger at George Washington and Jefferson National Forests.

A PUBLIC MONITORING TRIP was held in March 2017. Fifteen (15) participants visited the newly planted American chestnut planting research site, observed timber sale operations on the active Porters Mill Timber Sale, and evaluated a timber stand improvement unit treatment.

Participants in the 2017 Pubic Monitoring Trip visiting an active timber harvest operation. Photo by Jeff Shifflett

VEGETATION MONITORING: Vegetative sampling (Forest Structure and Composition--FSC protocol developed by the Central Appalachian Fire Learning Network Partners) is used to monitor fire effects across the Central Zone of the George Washington and Jefferson National Forests. The monitoring detects shifts in the forest structure and vegetation and if the forest is shifting towards the desired conditions identified in the Forest Plan. In 2017, five-year post burn vegetation monitoring was completed in two (2) burn units on 17 plots in the Lower Cowpasture River Restoration Project Area.

Jean Lorber (TNC) and Lindsey Curtin (USFS) stop to admire pine regeneration on the way to measure 5 year post burn vegetation in the Big Wilson burn unit.

Photo by Nikole Simmons

Oak heath forest 5 years post burn. Photo by Nikole Simmons

BREEDING BIRD SURVEYS: Using pre- and post-burn ecological monitoring plots, an enthusiastic group of TNC and USFS staff and volunteers worked together to survey 107 plots. These plots were monitored during the peak of breeding season. Preliminary trends in abundance of these species will help to document changes in habitat and inform future management decisions. A higher number of individuals was recorded during this spring over previous years, with a total of 1,292 birds. This season has also been the highest number of species recorded with 60 species.

Report prepared by Elizabeth Mizell, volunteer for The Nature Conservancy, for the Lower Cowpasture Restoration Project, November 17, 2017.